

REMARKS

Reconsideration of this application as amended is respectfully requested. Claims 1-29 are pending. Claims 15-29 have been previously withdrawn. Please cancel claims 6 and 15-29. Please amend claims 1, 7-9, and 11-13. Please add new claim 30. Support for the amendments is found in the specification. Applicants submit that the amendments do not add new matter.

Claim Rejections - 35 U.S.C. § 112

The Examiner has rejected claim 11 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended claim 11 to more particularly point out and distinctly claim the subject matter that Applicant regards as the invention. As such, Applicant respectfully requests the removal of the 35 U.S.C. 112 rejection.

Claim Rejections – 35 U.S.C. § 102

The Examiner has rejected claims 1-5, 8-11 and 13-14 under 35 U.S.C. § 102(b) as being anticipated by Lenz et al. (US Patent 5,534,751). The Examiner has rejected claims 1 and 6 under 35 U.S.C. § 102(b) as being anticipated by Shinagawa et al. (JP 03208338). The Examiner has rejected claims 1 and 7 under 35 U.S.C. § 102(b) as being anticipated by Weakliem et al. (US Patent 4,450,787). The Examiner has rejected claims 1 and 12 under 35 U.S.C. § 102(b) as being anticipated by Henderson et al. (US Patent 6,008,130).

Applicants respectfully submit that claim 1, as amended is not anticipated by Lenz. Claim 1 includes the following limitations:

“An apparatus comprising:
a plasma chamber containing a plasma for a plasma-assisted material process upon a substrate;
a solid shielding plate within said plasma chamber disposed between the substrate and a gas inlet of the plasma chamber to actively direct ion flux to desired areas of the substrate; and
a supporting structure to support said shielding plate within said chamber.”

(Amended Claim 1) (Emphasis added)

Lenz does not disclose a solid shielding plate disposed between the substrate and the gas inlet. Lenz (and Henderson) discloses an apparatus for confining the plasma to the interaction space. As shown in Figures 1 and 2, the ring assembly (30) and each of the rings (32) does not constitute a solid shielding plate. Moreover, the ring assembly (30) is not disposed between the substrate and gas inlets as claimed and thus cannot actively direct ion flux as further claimed.

Henderson discloses the plasma confinement ring of Lenz with modifications to the annular corners consisting of roughened, rounded corners to provide gradual transition from the annular surface to the adjacent surfaces of each ring and to increase the surface area. Both of these modifications are an attempt to prevent undesired material from flaking off the rings of the plasma confinement ring. Henderson, like Lenz does not include the limitations of a solid shielding plate disposed between the gas inlet and the substrate to direct ion flux.

Shinagawa does not disclose the limitation of a solid shielding plate disposed between the substrate and the gas inlet, nor a shielding plate that actively directs ion flux.

Weakliem discloses a perforated metallic surface (42) that has a screen portion (43). The screen portion (43) is disposed between the substrate and the gas inlet, but the screen portion is a screen and cannot be equated with a solid shielding plate. Moreover the screen portion is used to confine the plasma and limit the RF field so that the particles passing through the screen have a reduced energy level. Weakliem is not concerned with and does not disclose a solid shielding plate that actively directs ion flux.

For these reasons, applicant respectfully submits that neither Lens, Henderson, Shinagawa, nor Weakliem anticipate the invention as claimed in amended claim 1. Given that claims 2-5 and 7-14 depend, directly or indirectly, from claim 1, applicants respectfully submit that claims 2-5 and 7-14 are likewise not anticipated by Lens, Henderson, Shinagawa, or Weakliem.

Additionally, applicants respectfully submit that new claim 30 is not anticipated by Lens, Henderson, Shinagawa, or Weakliem for the reasons discussed above.

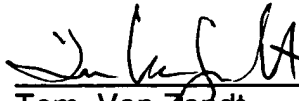
Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including

extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account
No. 02-2666.

Respectfully submitted,

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